

**REDIRECTING FEEDTHROUGH LENS ANTENNA SYSTEM
AND RELATED METHODS**

Abstract of the Disclosure

A redirecting feedthrough lens antenna system may include first and second phased array antennas coupled together in back-to-back relation. More particularly, the first and second phased array antennas may include respective first and second arrays of dipole antenna elements thereon, wherein each dipole antenna element may include a medial feed portion and a pair of legs extending outwardly therefrom. The system may also include a respective phase shifter connected between each pair of back-to-back dipole antenna elements of the first and second dipole antenna arrays. Furthermore, a controller may be included for cooperating with the phase shifters to cause a signal received by the first phased array antenna at a first angle to be transmitted from the second phased array antenna at a redirected second angle different from the first angle.